Public Affairs Live Media Engagement System (PALMES)

I MEF PA SUMMIT

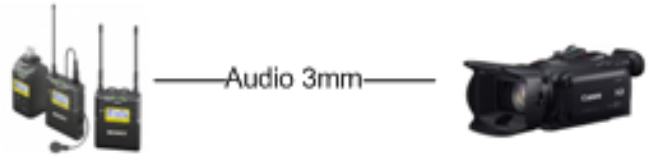
Introductions

- Training Team
  - SSgt. Charles McKelvey
  - Chris Horne (SPAWAR)
  - Kyle Johnson (Gemini 3 Group)
  - Stephanie Fenwick (Gemini 3 Group)

Agenda

- Overview of Major Components
- Workflow
- Assembling the Satellite Terminal
- Acquiring the Satellite
- Loading the Options File
- Video Encoder
- PuTTY
- Reference

Overview of Major Components



Audio 3mm

HDMI

Ethernet

Sony UWP-D
Wireless
Microphone

Canon XA25
Video Camcorder

Streambox
Avenir Mini 3C
Video Encoder

Tampa Microwave
Ku 95cm
Satellite Terminal

Workflow

1. Schedule Access
2. Configure
3. Preplanning
4. Transit to Site
5. Onsite Setup
6. Connect
7. Teardown

Workflow

1. Schedule Access

- Contact DVIDS to schedule live stream
  - DVIDS Technical Operations Center (TOC)
  - Phone: 678-421-6690
  - Email: dvidstoc@dvidshub.net

- Provide DVIDS with:
  - Your contact information w/ email address
  - Approximate location and time of live stream
  - Satellite Terminal information:
    - Tampa Microwave 95cm manpack Ku-Band
    - iDirect SN (on back of Satellite Terminal)
    - Using an iDirect iConnex-e850mp modem

Workflow

2. Configure

- Receive Options File from DVIDS via email
  - Small text file 5 KB
  - Example filename: RmtRmtsideLatest-50970.opt
  - Opens in Notepad or WordPad
- Check and load the Options File onto the Satellite Terminal
- Video Encoder
  - Edit Metadata (Title, Reporter, Location, DRM)

Workflow

3. Preplanning

- Determine possible locations for Onsite Setup
  - Use http://www.dishpointer.com/
  - Clear line of site
  - SAFETY
- Power source
- Access to a phone to call DVIDS TOC
- Access to computer or tablet for

Workflow

4. Transit to Site

- Commercial Air
  - Remove small case with three Satellite Terminal Batteries and ship to destination.
  - Carry-on the small case with the Encoder battery.
  - If necessary, carry-on small case with Wireless Mic to reduce weight of case.
- Military Air
  - Can be transported as-is.

Workflow

5. Onsite Setup (1 of 2)

- Find the Satellite
  - Use a smartphone app
    - Dish Align App
    - Satellite Locator App – Norsat
  - Use printout from http://www.dishpointer.com
  - Worst case, use display on Satellite Terminal and teardown/reassemble as needed.

- Assemble Satellite Terminal and acquire the Satellite

Workflow

5. Onsite Setup (2 of 2)

- Call DVIDS TOC to join Satellite network.
  - Might need to have them increase your power.
- Connect Video Encoder and Video Camcorder
- On Encoder, select KU SATCOM 4Mbps (CUSTOM) preset
- If bandwidth is insufficient TOC will ask to adjust encoder settings

Workflow

6. Teardown

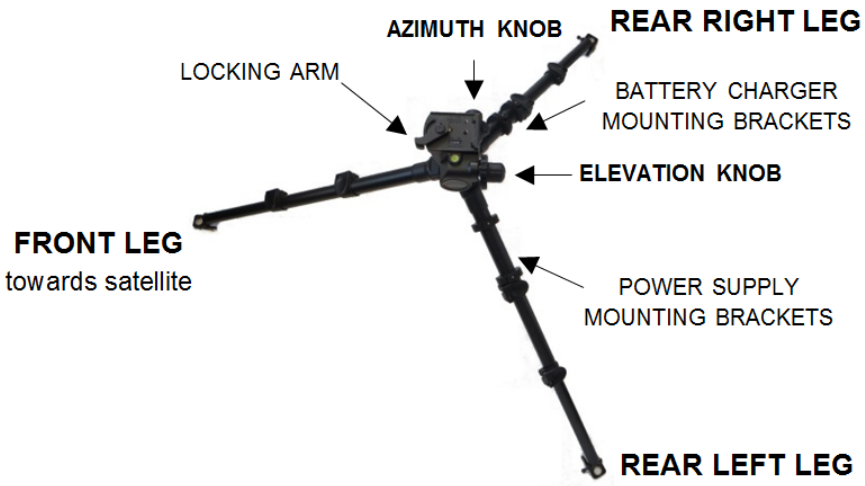
   - Call DVIDS TOC to let them know you're done.

   - Power Off and Pack Up

Assemble Satellite Terminal

- 10 – 15 minutes
- No tools are required

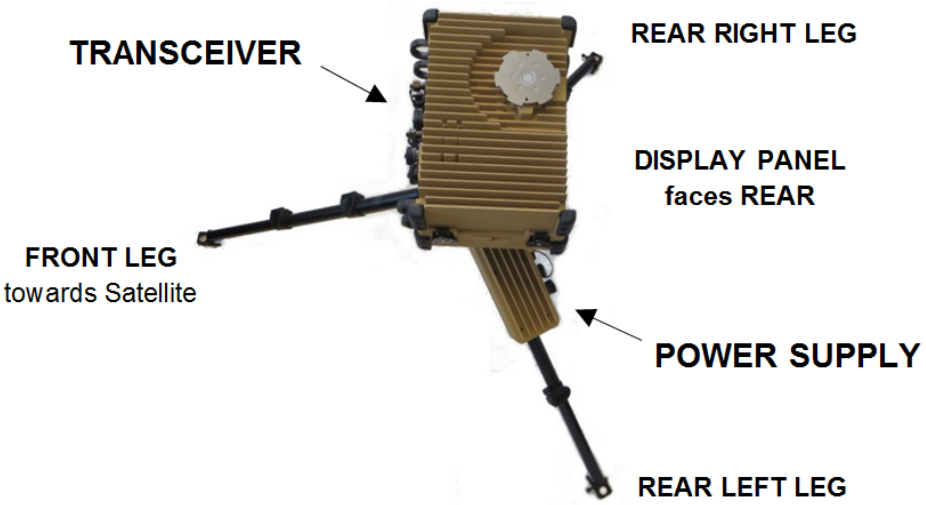
Assemble Satellite Terminal



TRIPOD

1. Point front leg (with NO mounting brackets) towards satellite.
2. Level tripod by adjusting length of legs.
3. Rotate tripod head in horizontal plane and ensure leveling bubble stays in circle.
4. Rotate head so locking arm is positioned towards front and elevation knob towards rear.

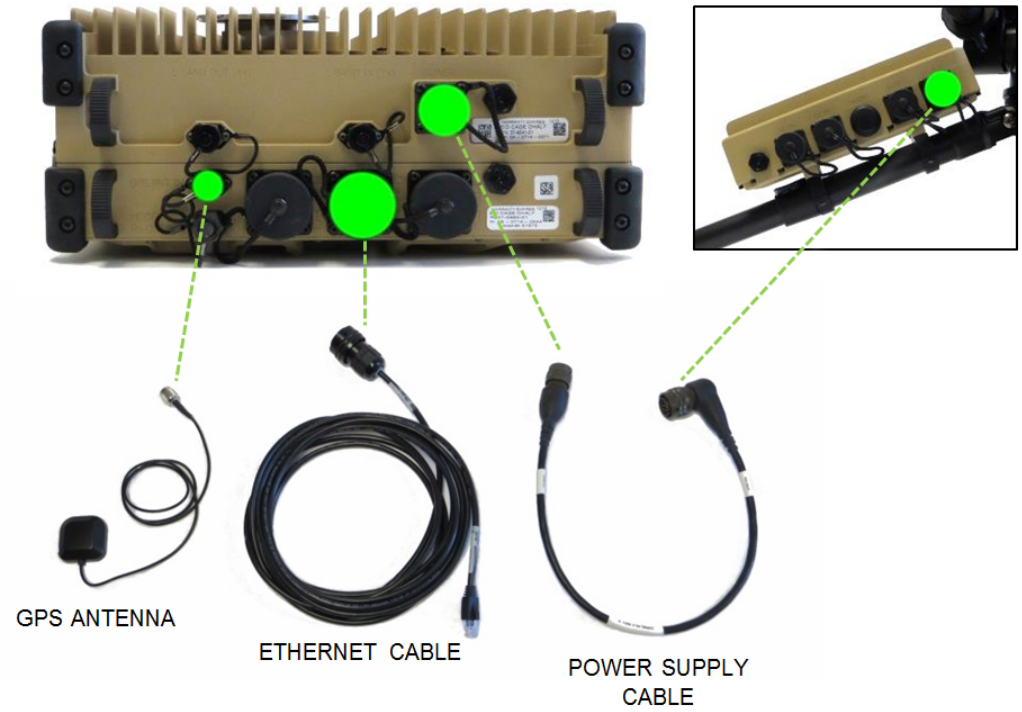
Assemble Satellite Terminal



TRANSCEIVER / POWER SUPPLY

1. Slide Power Supply onto rear left tripod leg.
2. Mount Transceiver on tripod head. Display panel faces rear. Ensure locking arm engages fully.
3. If using Battery Charger, attach to rear right tripod leg.

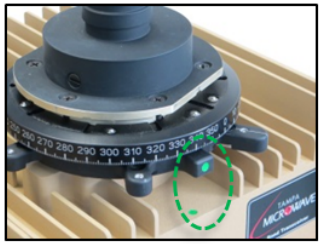
Assemble Satellite Terminal



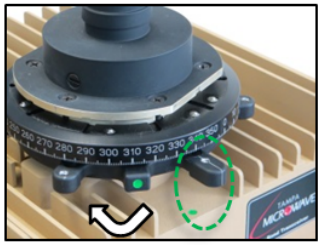
CABLES / GPS ANTENNA

1. Connect GPS Antenna (GPS ANT IN).
2. Connect Ethernet Cable (ETHERNET 2).
3. Connect Power Supply to Transceiver (DC OUT to POWER).

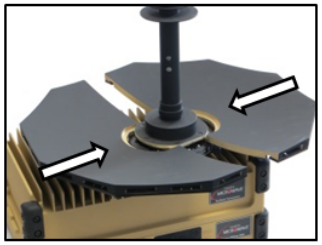
Assemble Satellite Terminal



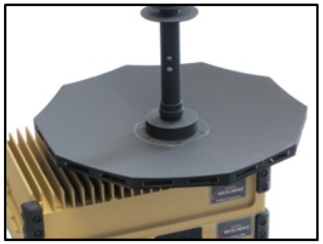
1) Guide FEED with green dots.



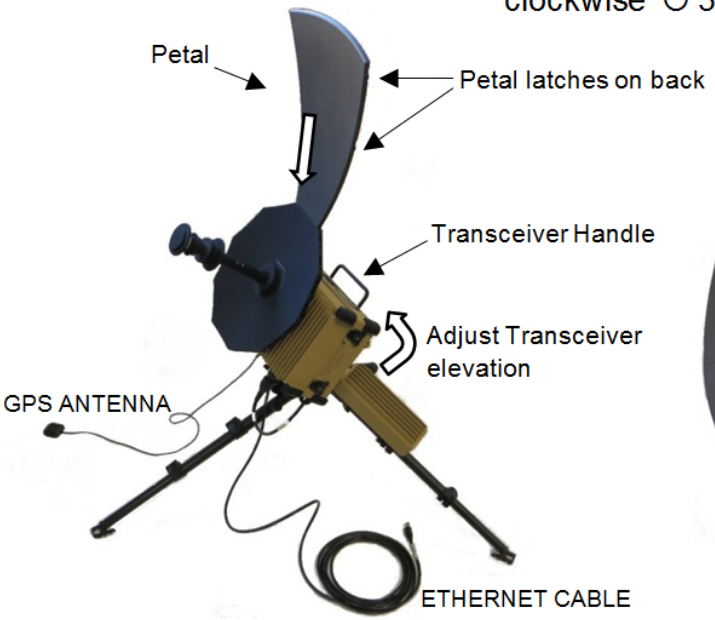
2) Lock FEED by turning LOCKING ARM clockwise ↻ 30°.



3) Slide both sides of HUB onto FEED.



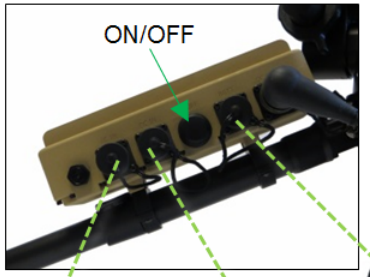
4) Ensure FEED securely attached to TRANSCEIVER and HUB is able to rotate with applied pressure.



FEED / HUB / PETALS

1. Attach Feed and Hub per above steps.
2. Hold handle on Transceiver and adjust elevation using outer ring.
3. Rotate feed to insert all 10 petals and close petal latches.
4. Attach both Stabilizer Arms but DO NOT lock until after satellite acquisition.

Assemble Satellite Terminal



AC INPUT CABLE

DC INPUT CABLE

BATTERY CHARGER

3 BATTERY CABLE
Note: Two cables included in kit.
One connects to BATT, other to DC IN.

POWER ON

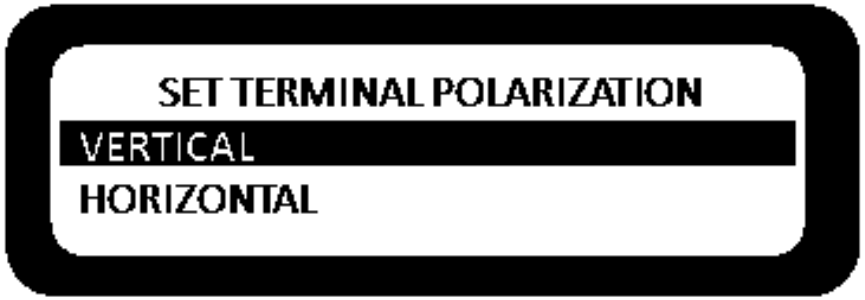
1. Connect desired power source (AC IN, DC IN, or BATT) to the Power Supply.
2. Press ON/OFF button to power on.
3. Allow 90 seconds for terminal to boot.

Note: To power off, press ON/OFF button. DO NOT power off during boot.

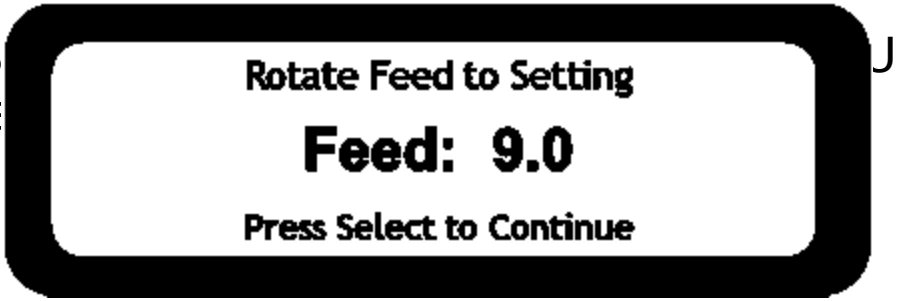
Acquire Satellite

ACQUIRE SATELLITE (ALL PERFORMED FROM TRANSCEIVER DISPLAY)

1. Select **Satellite** and set **Polarization** (provided by Satellite Controller).



2. Adjust skew (

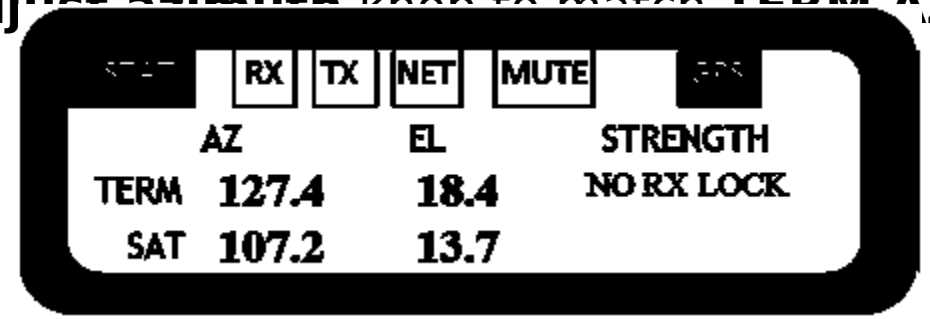


Use numbers on base of Ante

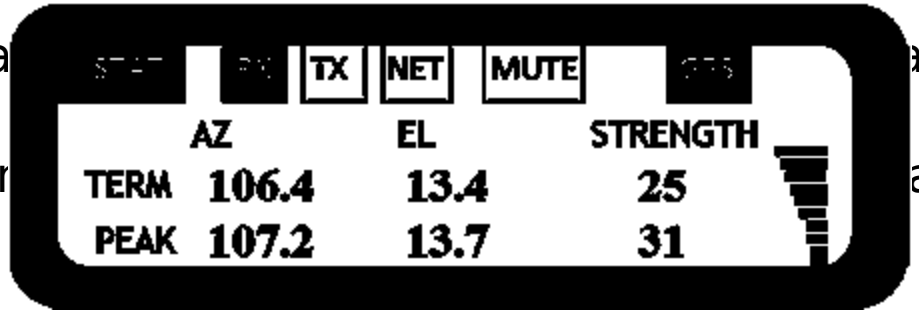
Acquire Satellite

ACQUIRE SATELLITE (ALL PERFORMED FROM TRANSCEIVER DISPLAY)

3. **First adjust elevation** knob to match **TERM EL** with **SAT EL**
4. **Second adjust azimuth** knob to match **TERM AZ** with **SAT AZ**



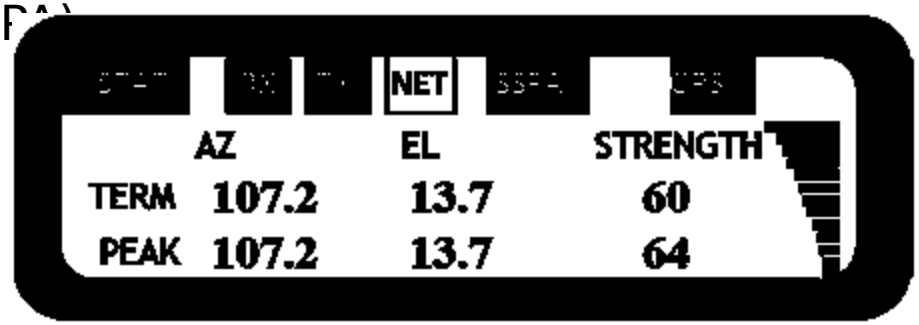
5. Sweep left a ator box turns black.
6. Tweak **AZ** ar attained.



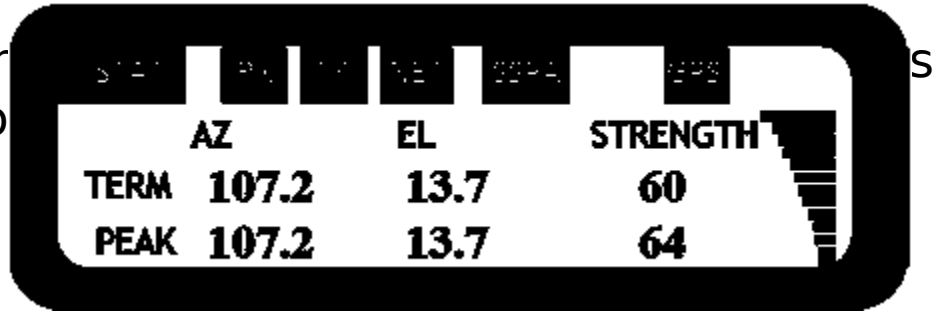
Acquire Satellite

ACQUIRE SATELLITE (ALL PERFORMED FROM TRANSCEIVER DISPLAY)

7. Call Satellite Controller to coordinate transmission.
8. To transmit (UNMUTE the SSPA) press the **SEL** button (MUTE changes to SSPA)



9. Once **NET** ir s in the satellite netwo



Loading Options File

- Use iSite software
  - Already installed on tablet
  - Included on CD in:
    - 01 Satellite Terminal > iSite 3.1.1.2 folder
  - Only runs on Windows
  - Options Fil

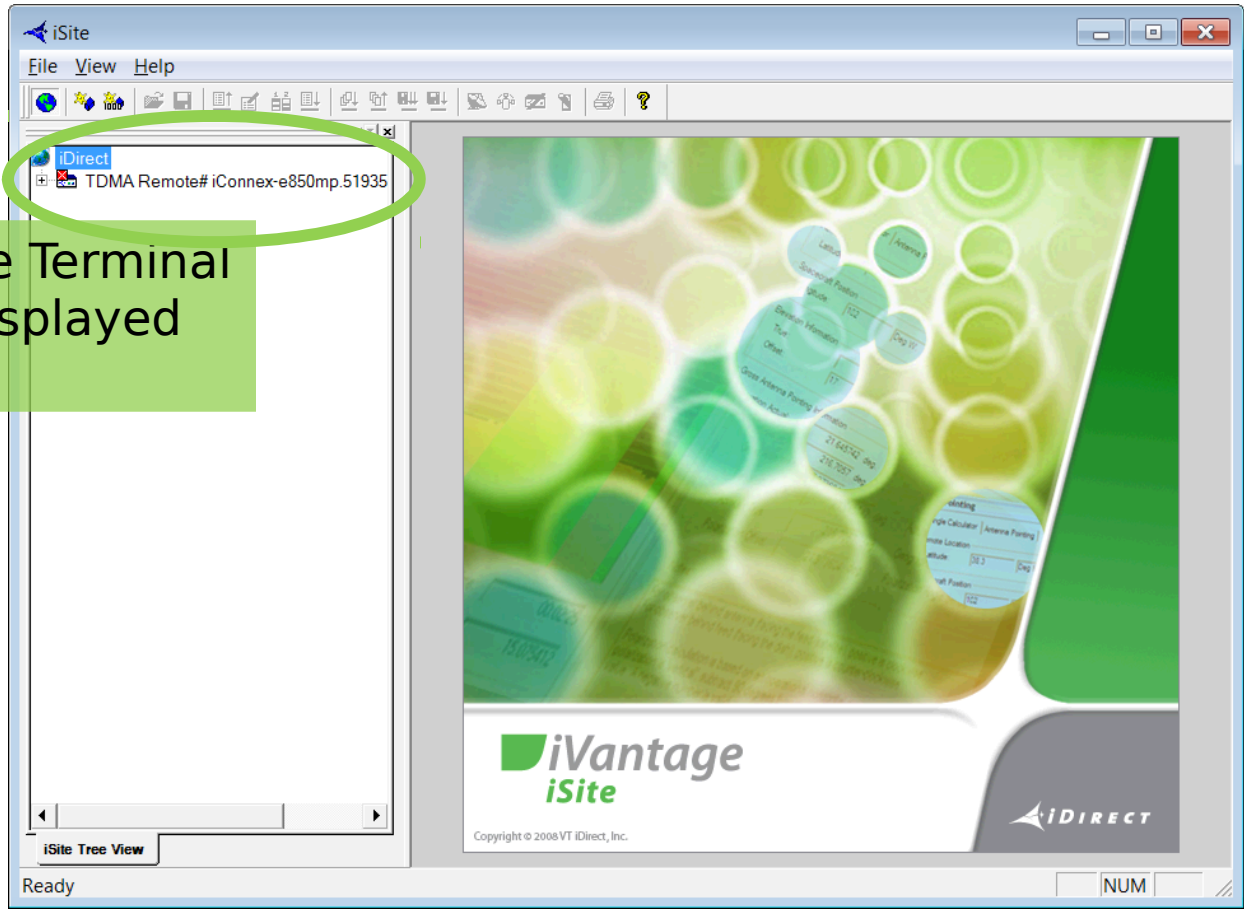
ellite Terminal

Loading Options File

- Connect computer to Satellite Terminal using Ethernet cable.
  - For tablet, use the USB-to-Ethernet adapter
  - On Satellite Terminal
    - use ETHERNET1 or ETHERNET2
    - DO NOT use CONSOLE
- Don’t need to assemble entire Satellite Terminal. Only need Transceiver and Power Supply w/ Ethernet and Power Cables
- Power ON Satellite Terminal

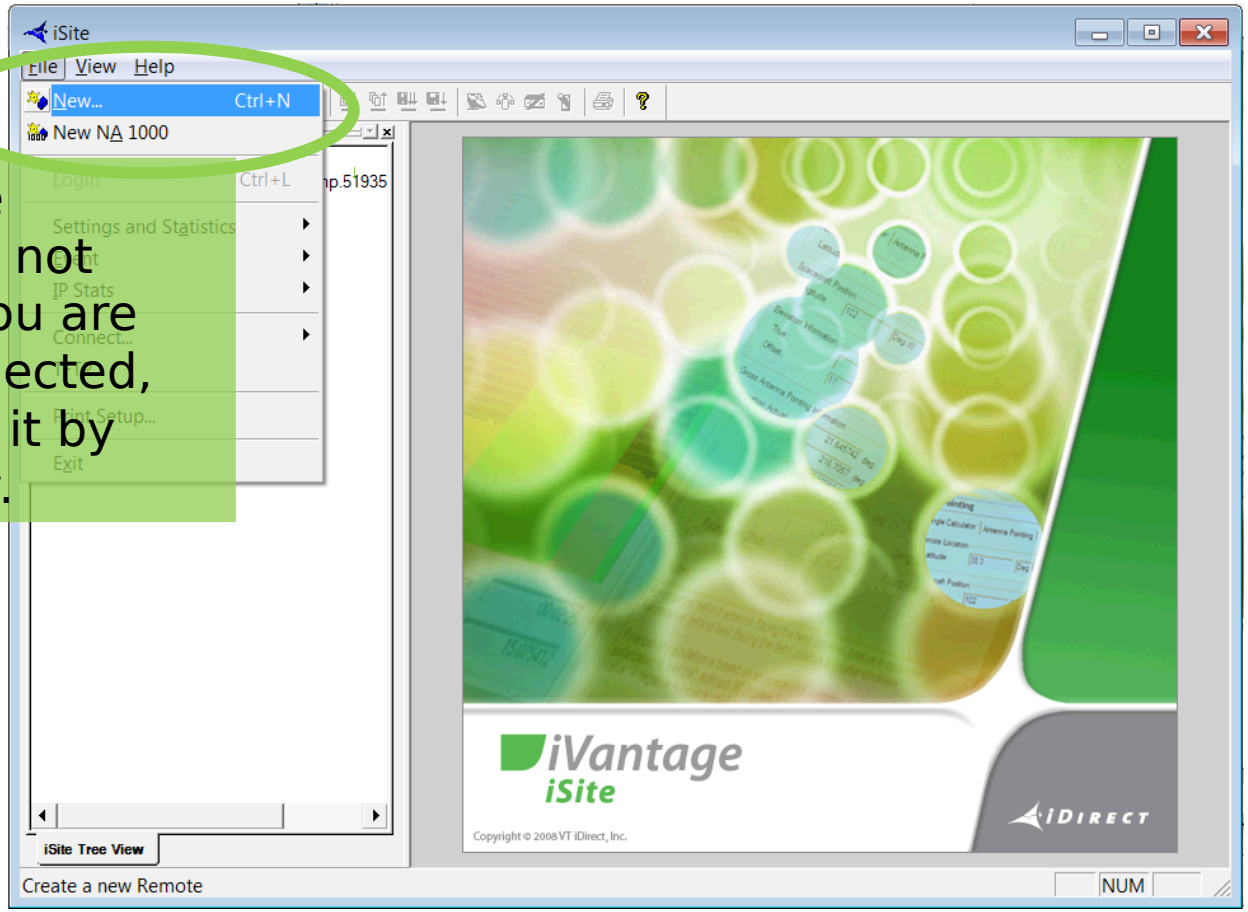
Loading Options File

After Satellite Terminal boots, it is displayed here.



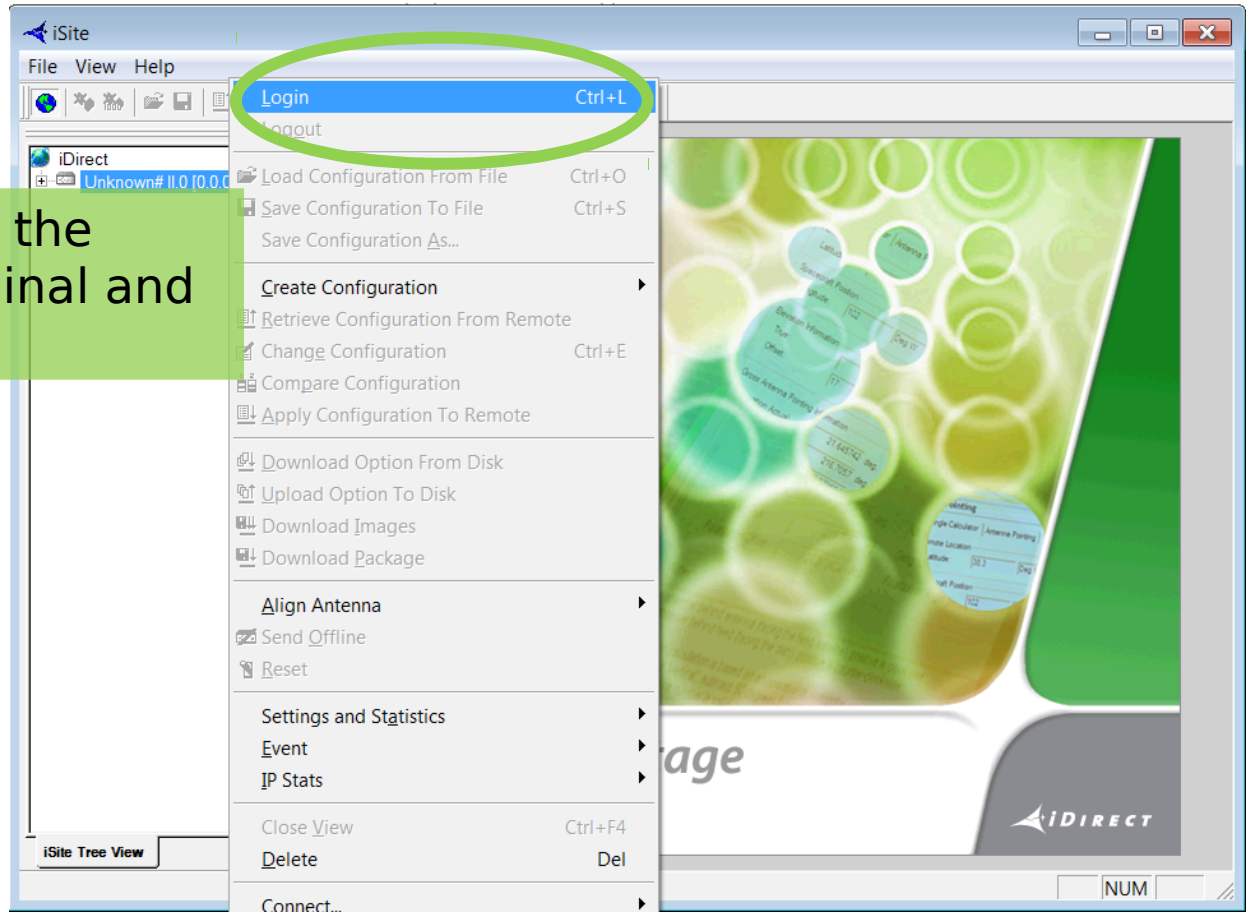
Loading Options File

If the Satellite Terminal does not appear and you are sure it is connected, manually add it by selecting New.

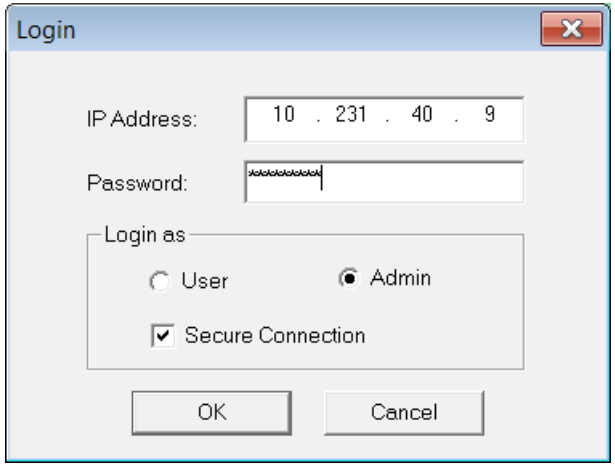


Loading Options File

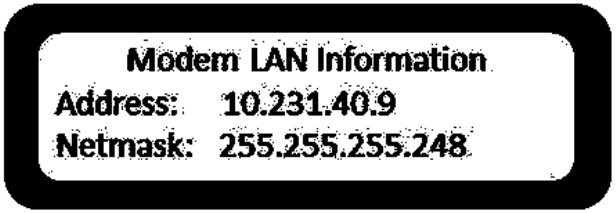
Right click on the Satellite Terminal and select Login



Loading Options File



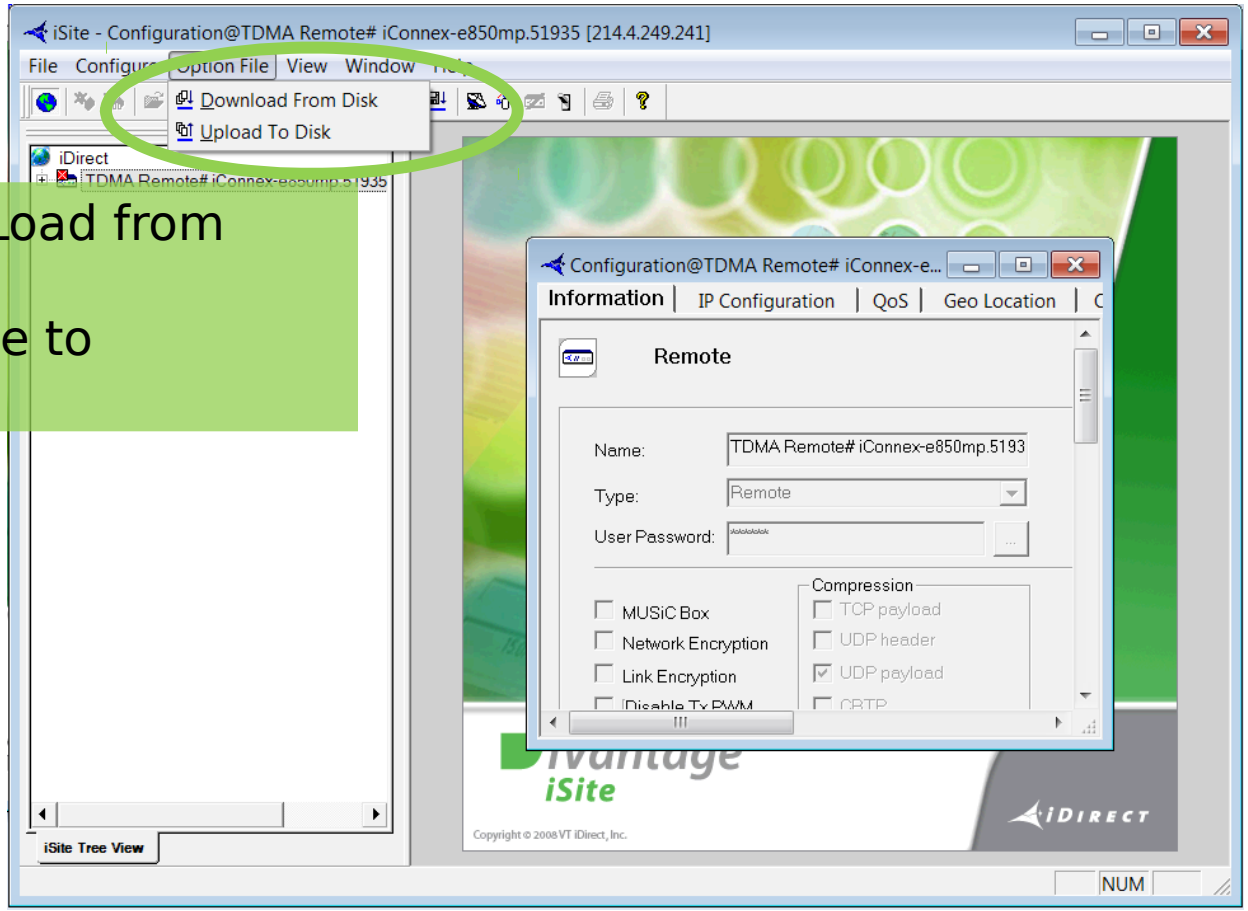
- IP Address should match IP Address from Front Panel (Modem LAN Information). If manually added, this will need to be entered



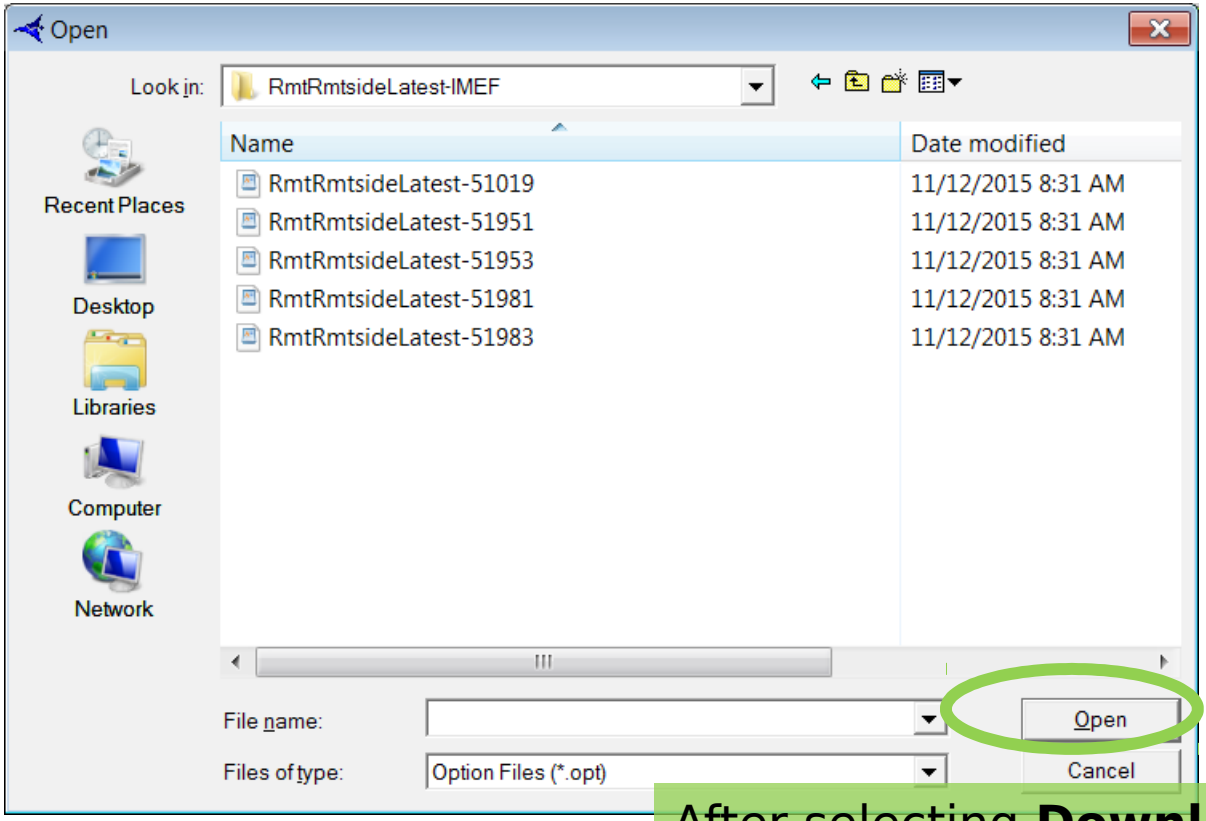
- Password: “P@55w0rd!” or “iDirect”

Loading Options File

Download = Load from Computer
Upload = Save to Computer

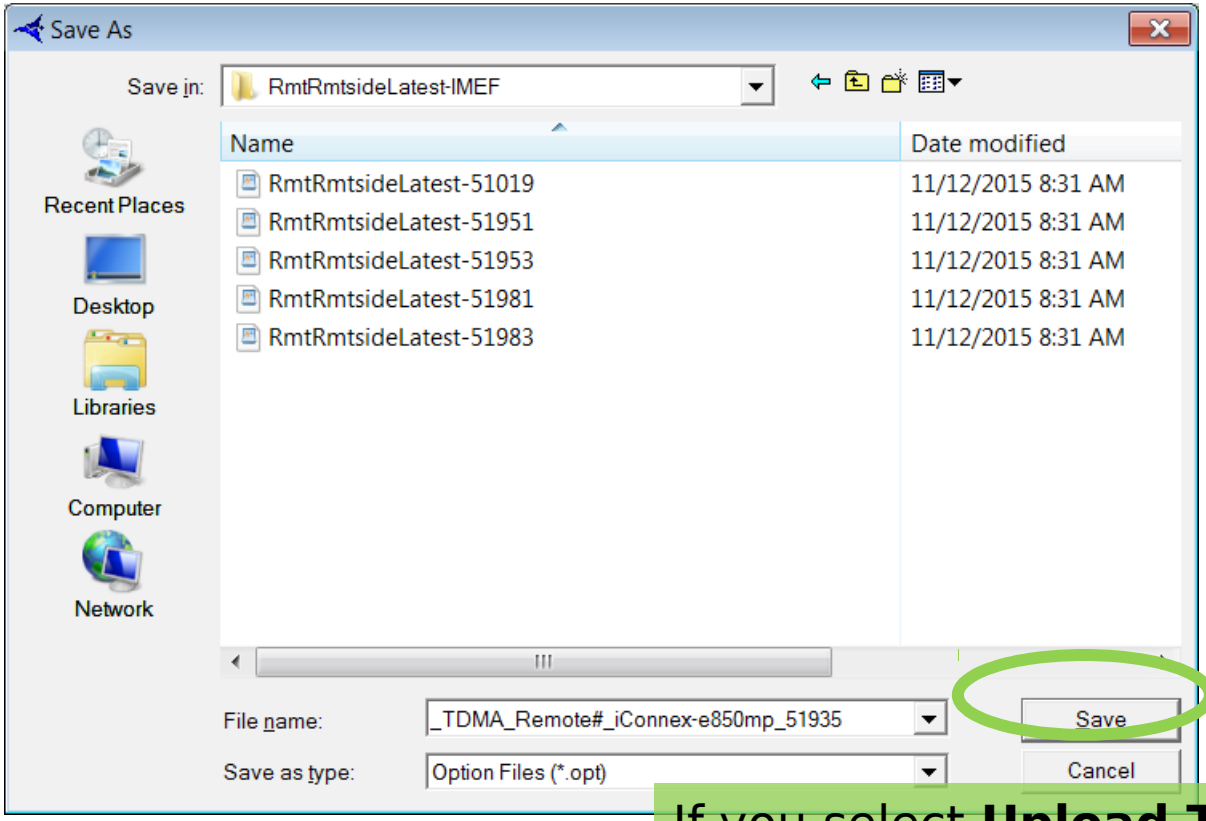


Loading Options File



After selecting **Download From Disk**, you'll be able to browse for the file.

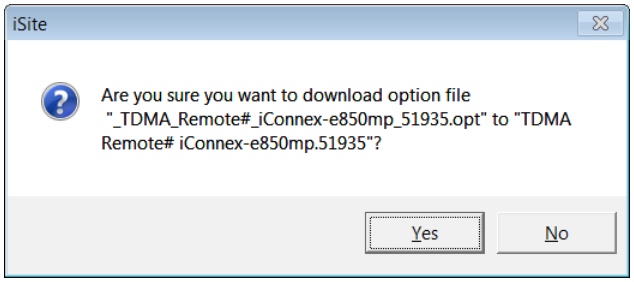
Loading Options File



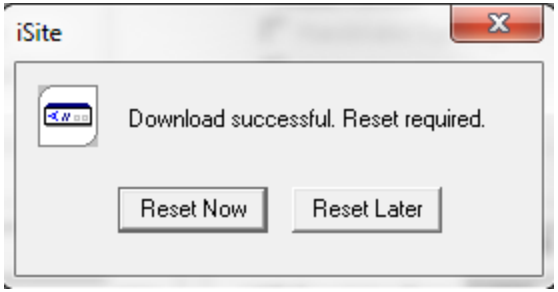
If you select **Upload To Disk**, you'll be able to save the what's on the Satellite Terminal to your computer.

Loading Options File

- After loading the Options File (**Download From Disk**), the Terminal will ask for confirmation. Double check the iDirect SNs and click **Yes**.

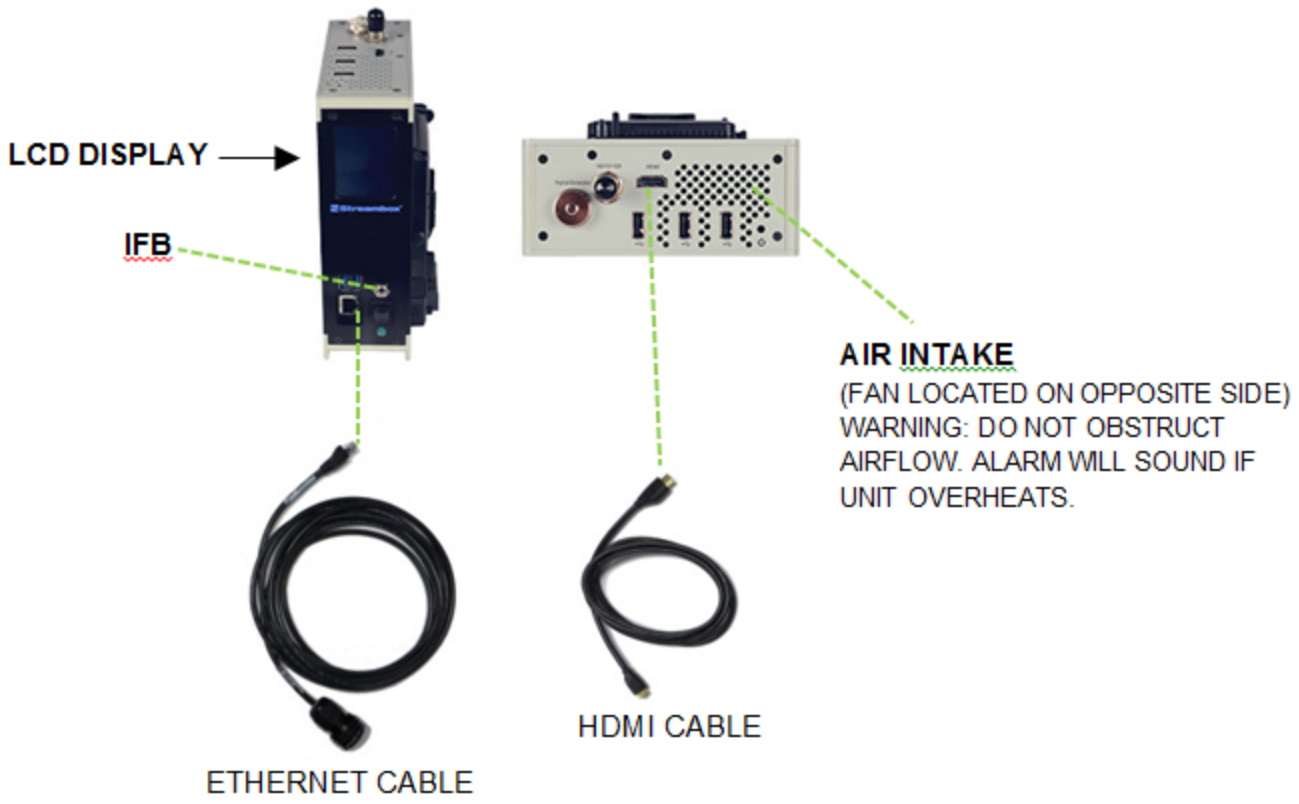

iSite
Are you sure you want to download option file "_TDMA_Remote#_iConnex-e850mp_51935.opt" to "TDMA Remote# iConnex-e850mp.51935"?
Yes
No

- Click **Reset Now**. Wait for the Terminal to reset before turning off.



Video Encoder

Streambox Avenir Mini-3C (V-Mount)



Video Encoder

POWER ON/OFF

ON: Press upraised half of power switch for two seconds and release. Allow the unit 60 seconds to boot up.

OFF: Press upraised half of power switch for two seconds and release. Allow 10 seconds for software shutdown before disconnecting power.

WARNING: Holding the power switch continuously for 6 seconds will cause the unit to bypass the software shutdown and may

Video Encoder

WI-FI REMOTE CONFIGURATION (1 of 3)

- Encoder can be operated but NOT configured via LCD display.
- Logon to Encoder’s wifi network using tablet, laptop, or smartphone.
- Encoder’s wifi network is only used for configuring the encoder. Does not provide Internet access.

Video Encoder

WI-FI REMOTE CONFIGURATION (2 of 3)

- Right click on Windows Taskbar
  - Select SSID: *serial number of Mini 3C*
  - Password: 1111111111
    - number one repeated ten times)

Video Encoder

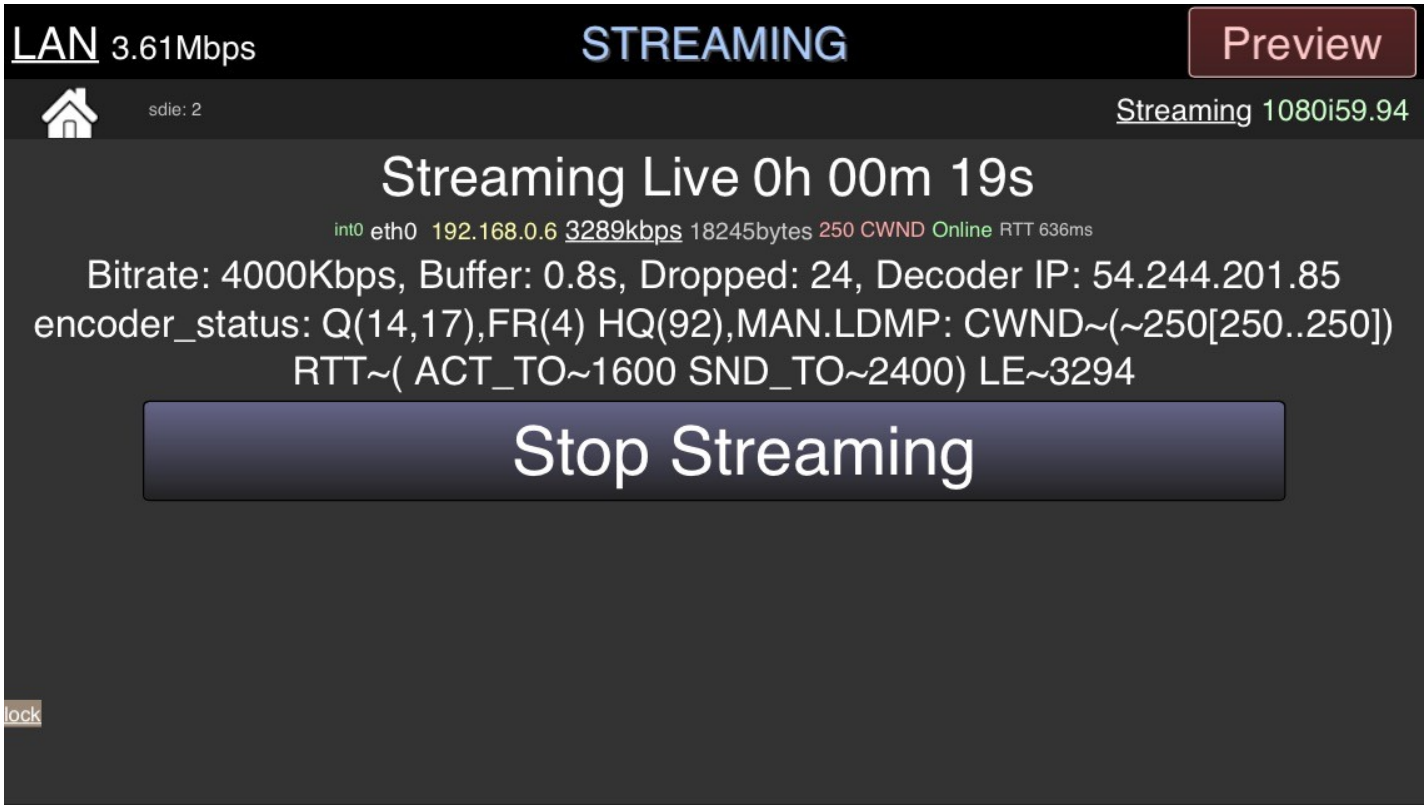
WI-FI REMOTE CONFIGURATION (3 of 3)

- Open web browser
  - Enter URL address: http://10.111.111.1 and hit enter.

Video Encoder

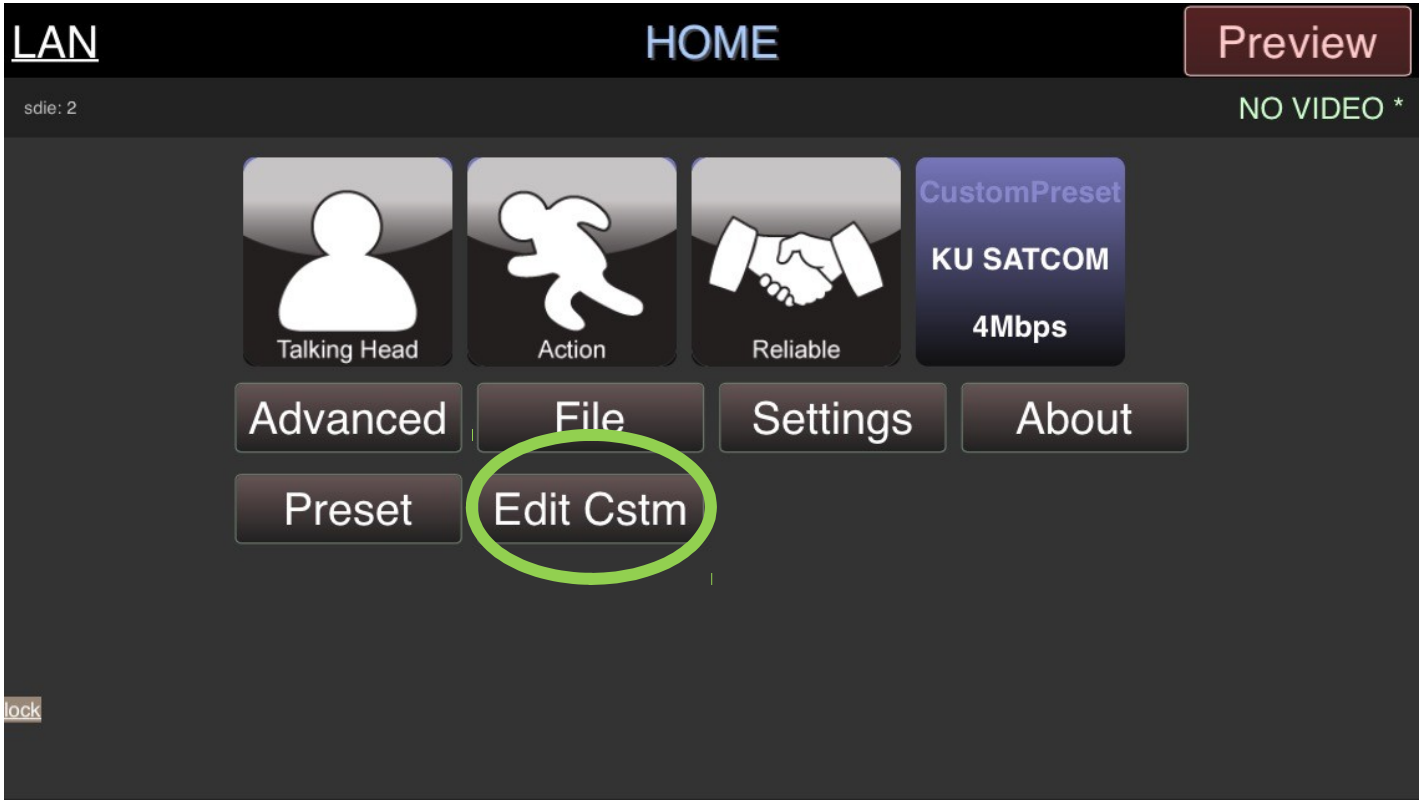
With a satcom link, MUST use “Custom Preset KU SATCOM 4Mbps” button.

Video Encoder



This is the screen displayed when streaming. Contains useful information for troubleshooting.

Video Encoder



If DVIDS TOC asks you to make changes (eg. lower data rate), use the “Edit Cstm” button.

Video Encoder

Video Encoder is already configured to work with DVIDS.

Here are the paths to check or edit the configuration:

IP Address: Home > Settings > Network > LAN1 > choose **DHCP** (auto assigned) or **Static** (enter assigned IP address)

Decoder: Home > Settings > Decoder > Favorites > select Decoder from list

IFB: Home > Settings > IFB > enter **IFB Server IP, Password, Channel, Codec, Buffer Size**

Metadata: Home > Settings > Network > Metadata > enter **Title, Reporter, Location, DRM**

Video Encoder

Here are the settings for the Custom Button. Can be changed if necessary using **Edit Cstm**.

Setting	Value
Preset Name	KU SATCOM 4Mbps
Bitrate	4000 kbps *(can be lowered if bandwidth is insufficient)*
VBR	0.8
FEC	OFF
AP	On
Pref. Quality	On
Resolution	HD Full *(requires connection to camcorder to make setting HD)*
Frame Rate	Full frame
Key Frame	300
Deinterlace	Off
Pref.Q.I	40
Audio Codec	AAC Low Bitrate
Channels	1
Sample	48000
ODCT	Off
Pref.Q.P.	120

Video Encoder

Here are the LDMP settings for the Custom Button. Can be changed if necessary using **Edit Cstm > LDMP** edit.

Setting	Value
Manual LDMP	ON
CWND	250
CWND_MIN	250
CWND_MAX	250
ACK_TO	1000
SND_TO	1800
RTT Multiplier	1
JITTER2_PERCENT	20
Shaping Percent	100

PuTTY

- Client used to communicate to devices.
- Non-graphical Command Line Interface.
  - Already installed on tablet
  - Included on CD in:
    - 01 Satellite Terminal > iSite 3.1.1.2 folder
  - Only runs on Windows

PuTTY

- Use PuTTY to access special commands for troubleshooting (e.g. adjust transmit power, send a carrier-wave, check for error messages).

- Used to recover the modem if you can’t communicate with it using iSite (e.g. loaded an incorrect options file that disabled the Ethernet Interface).

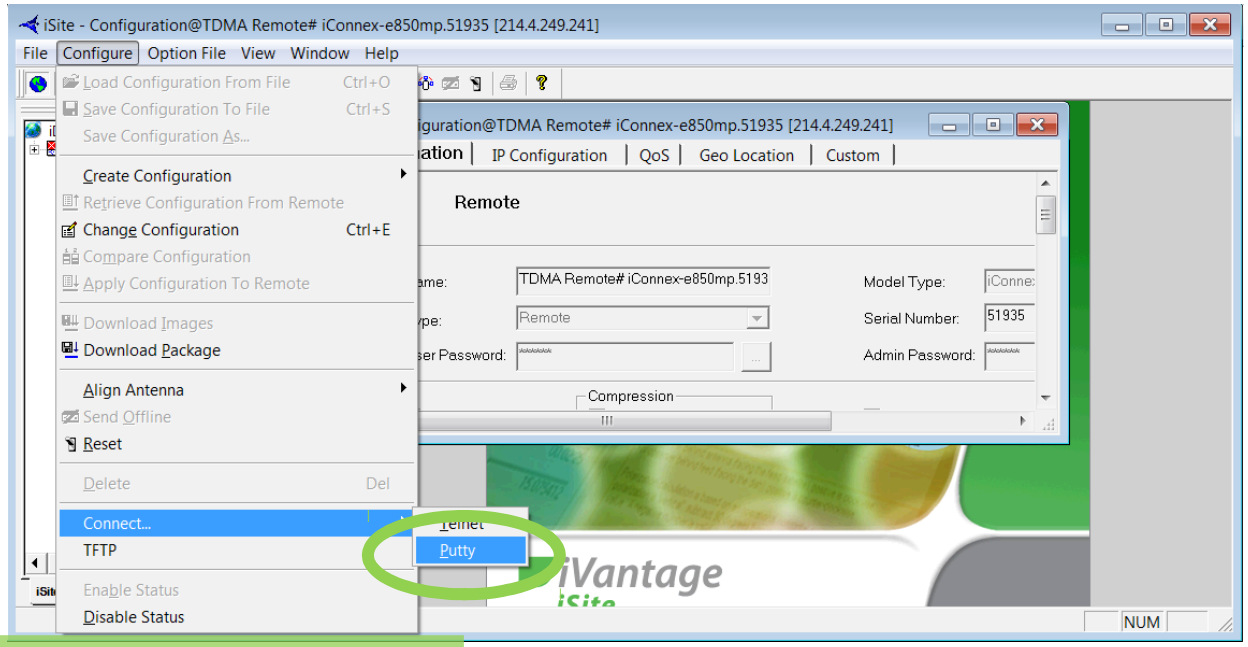
PuTTY

- Two ways to use PuTTY

1. Ethenet Cable
   - Same cable you'd use for the Encoder or tablet.
   - Connect to either ETHERNET 1 or ETHERNET 2 port on back of modem.

2. Console Cable
   - Light blue Console Cable (aka Cisco Cable)
     - Use DB-9 to USB converter (included) to connect tablet.

PuTTY w/ Ethernet Cable



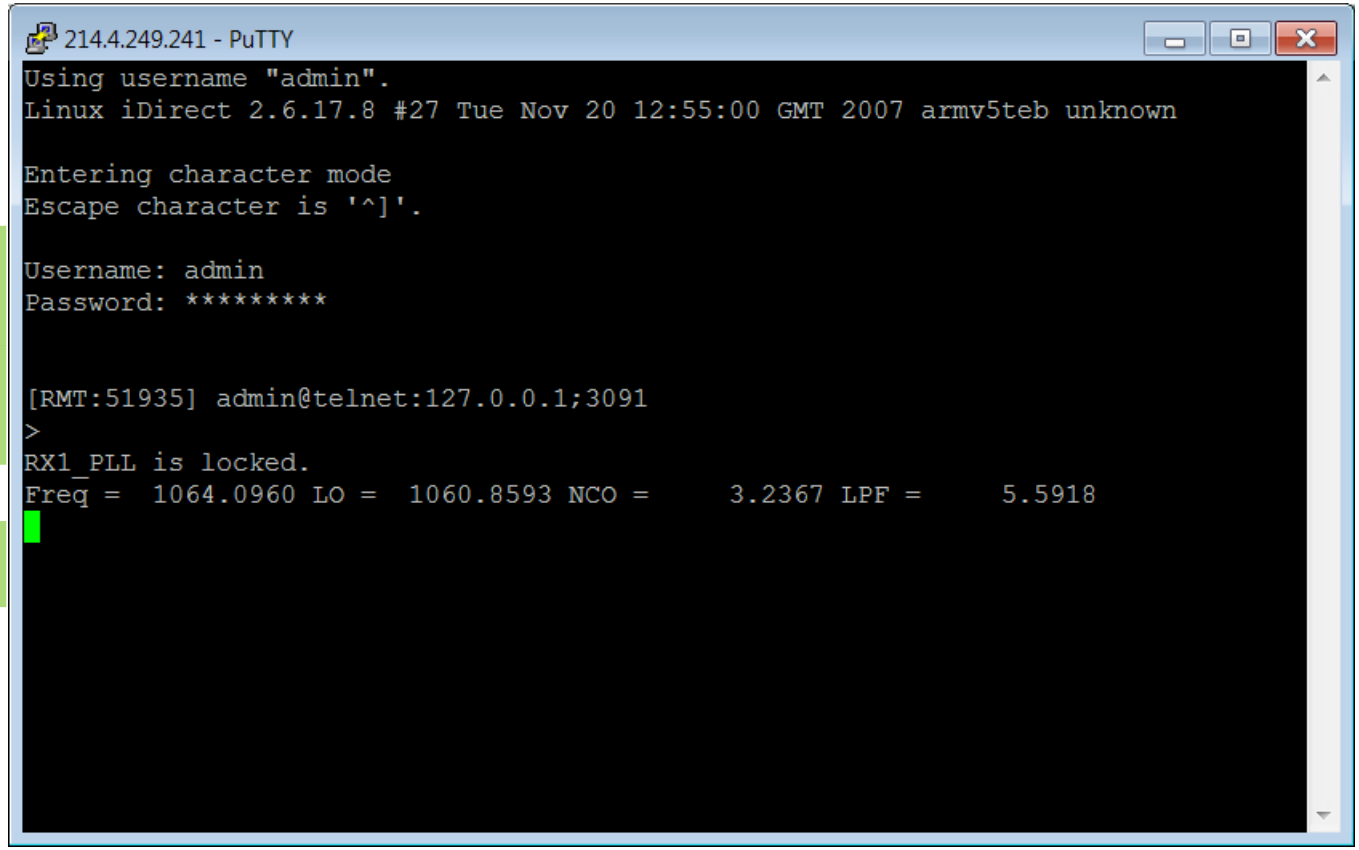
Can connect to PuTTY after modem login. The putty.exe needs to

PuTTY w/ Ethernet Cable

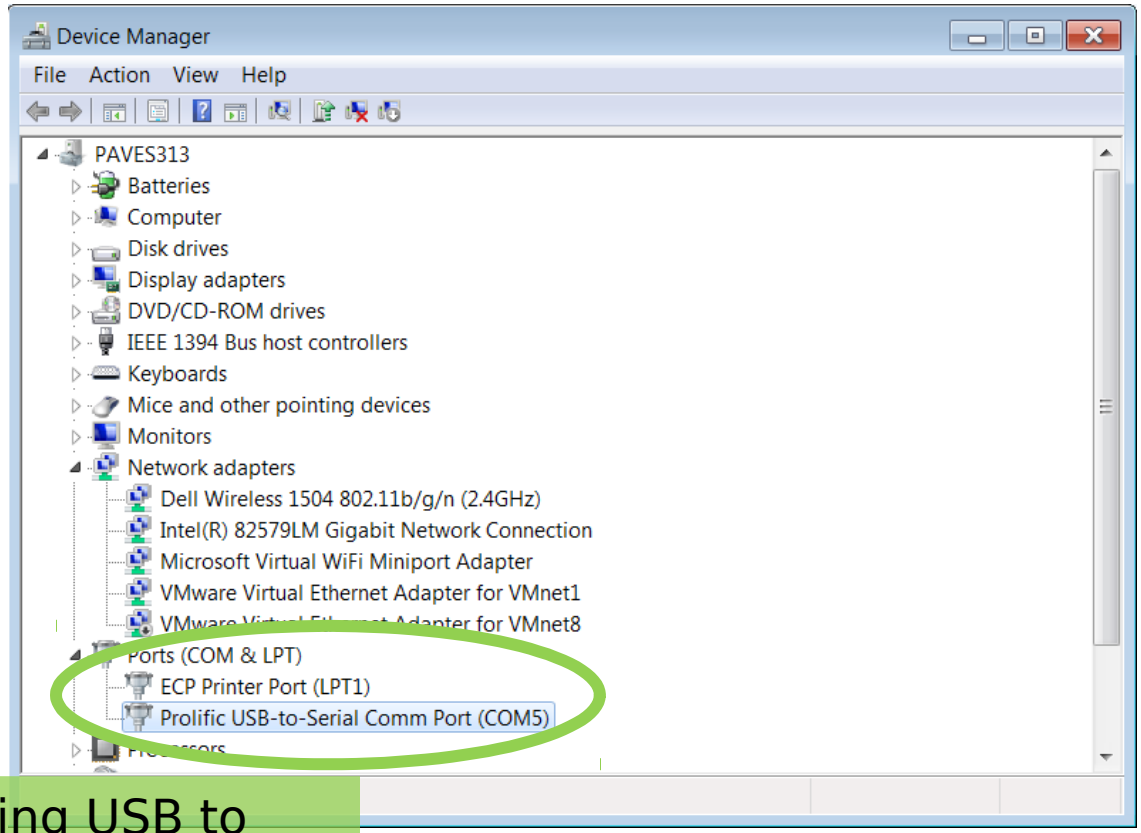
Username: admin
Password: P@55w0rd! *(or iDirect)*

You have access to the “>” prompt also called the “greater than prompt”

Status messages will continuously scroll.


214.4.249.241 - PuTTY
Using username "admin".
Linux iDirect 2.6.17.8 #27 Tue Nov 20 12:55:00 GMT 2007 armv5teb unknown
Entering character mode
Escape character is '^]'.
Username: admin
Password: *********
[RMT:51935] admin@telnet:127.0.0.1;3091
>
RX1_PLL is locked.
Freq = 1064.0960 LO = 1060.8593 NCO = 3.2367 LPF = 5.5918

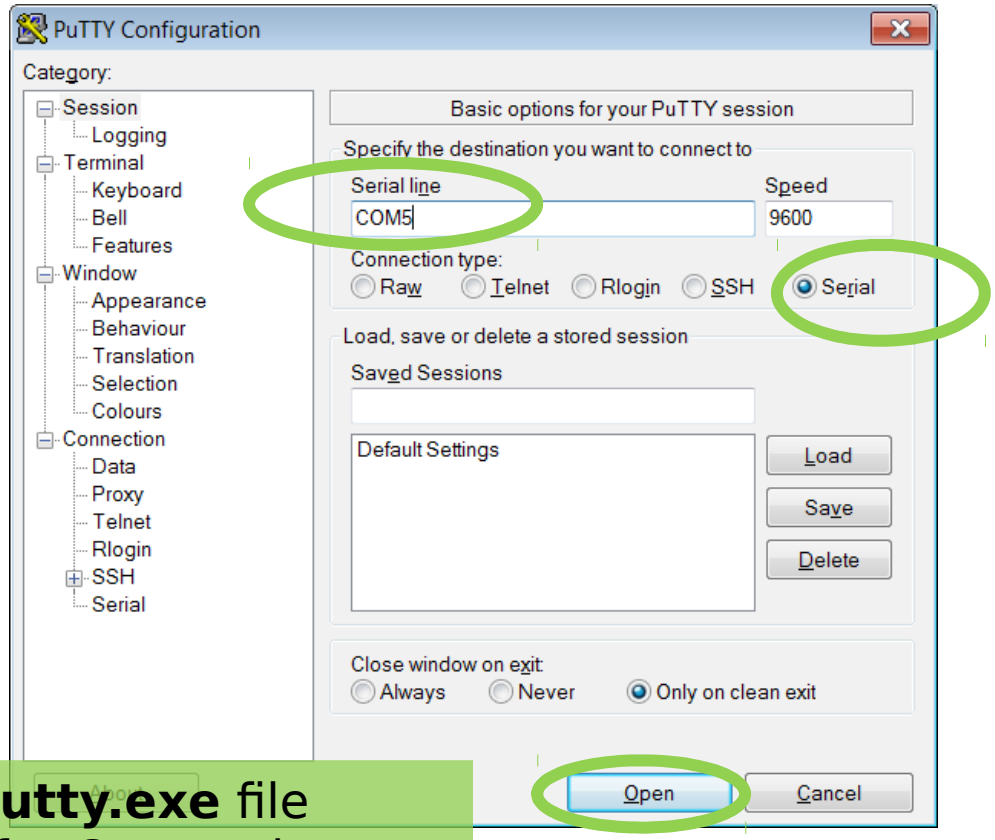
PuTTY w/ Console Cable



After connecting USB to Serial cable, use Device Manager to determine which COM port it was assigned to. In this case, it was assiged to COM5

PuTTY w/ Console Cable

putty.exe



1. Double click **putty.exe** file
2. Select **Serial** for Connection Type.
3. Enter in port from Device Manager into **Serial line**. In this case it was COM5.

PuTTY w/ Console Cable

Might need to hit Enter a couple times.

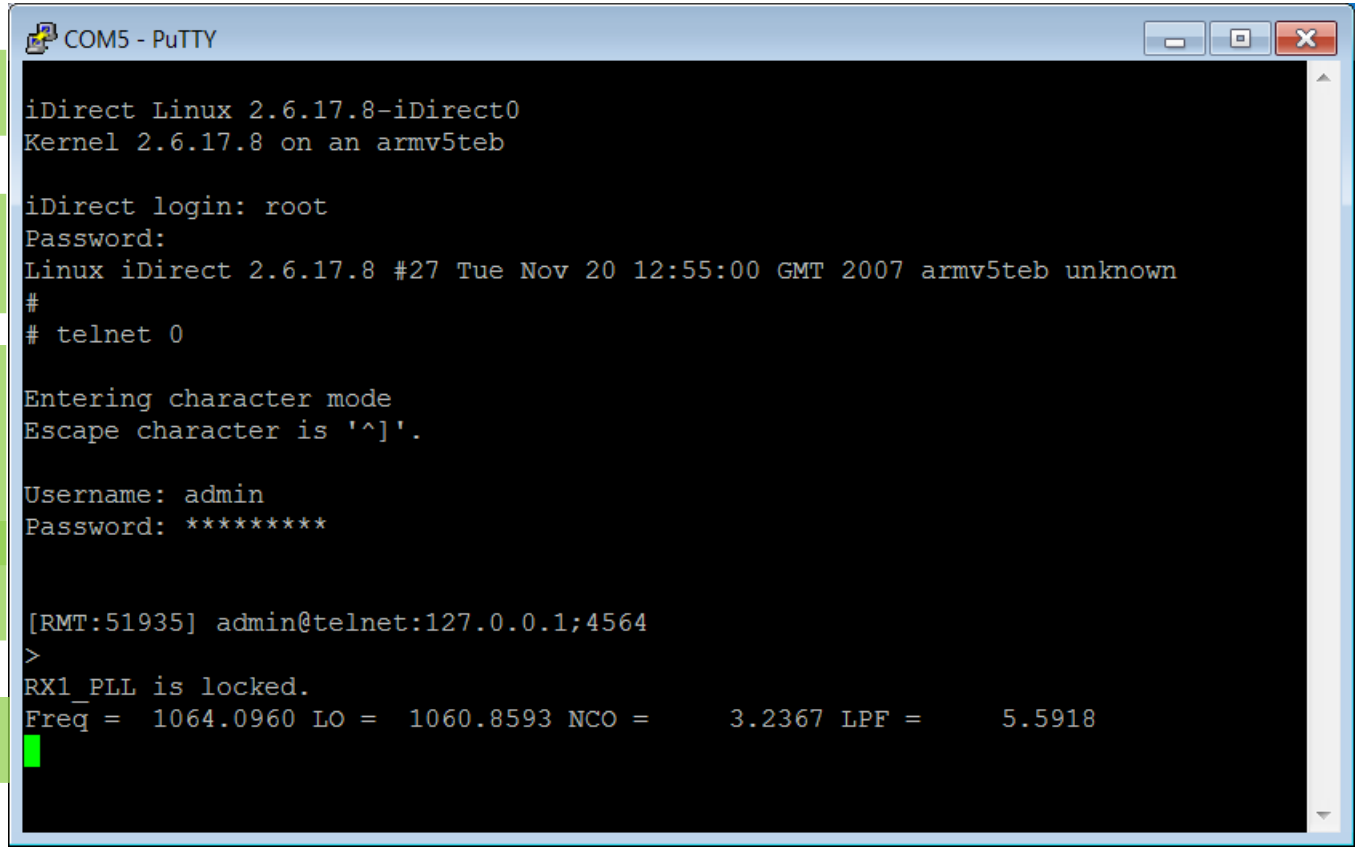
Username: root
Password: P@55w0rd! *(or iDirect)*

You have access to the “#” prompt

To get to “>” prompt type **telnet 0** (zero) and hit return

Username: root
Password: P@55w0rd! *(or iDirect)*

Status messages will continuously scroll.



iDirect Console Commands

Hub might request you enter the following commands during troubleshooting.

Command	Description
csp enable	access to extra commands
remotestate	status of terminal
latlong	manually update position
tx cw	transmit a carrier wave
tx freq	manually set frequency of carrier wave
tx power	manually adjust transmit power

Use Tab to autocomplete a command.
Use the up arrow to fill in previous command.

Reference Material

- Manpack Satellite Terminal Operations Manual
  - Tampa Microwave TM-OM-MP02, Rev A February 2013
  - Use Ku-Band portions (not X-Band)
  - Download Options File
    - For loading configuration file provided by Hub
    - When switching satellites or new configuration directed by Hub
    - Appendix B pages B-12 thru B-13
  - Update Software
    - Only needed if Modem SW is not compatible with Hub
    - Appendix B pages B-6 thru B-11
  - Troubleshooting
    - Section 4 pages 4-1 thru 4-4

Reference Material

- Streambox SBT3-9821/9822 Avenir Mini Series August 2015 v2.23
  - File Recording and Sending
    - If streaming live is not desired
    - Section 9 pages 31-33
  - Troubleshooting
    - Appendix E: Troubleshooting/FAQ pages 64-65
- Video Encoder Quick Reference Sheet

Reference

- Websites:
  - For commercial satellite footprints:
    - http://www.lyngsat.com/
  - For finding commercial satellites:
    - http://www.dishpointer.com/
- Smartphone Apps:
  - Dish Align App
  - Satellite Locator App – Norsat